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MONTANA WATER SUPPLY OUTLOOK

Snowpack and Streamflow Forecasts as of May 1, 1982

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THE MONTANA WATER SUPPLY OUTLOOK IS A PUBLICATION OF THE U.S. SOIL CONSERVATION SERVICE. THE SCS ADMINISTERS THE COOPERATIVE SNOW SURVEY PROGRAM IN COOPERATION WITH OTHER FEDERAL, STATE, AND PRIVATE AGENCIES, ORGNAIZATIONS, AND INDIVIDUALS.

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FEDERAL STATE PRIVATE
COOPERATIVE SNOW SURVEYS
Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro electric power generation, navigation, mining and industry
"The Conservation of Water begins with the snow fields"

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STATEWIDE OUTLOOK

Adequate water supplies forecast

Most areas had below average runoff in April as result of cool temperatures and retarded snowmelt.

Runoff for the next few months is forecast to be near average in central Montana, and below average in the Red Lodge Creek and the Little Bighorn River drainages.

Some tributaries to the Lower Clark Fork and lower Kootenai, west of the Divide, and the North Fork Flathead, are forecast to have a little above average runoff. Most of the remaining drainages should have above to well above average runoff this spring and summer.

The large amount of low elevation snow in the Missouri and Columbia River drainages does present a potential for high runoff early in the season. Temperatures and precipitation amounts will greatly influence the early runoff sequence.

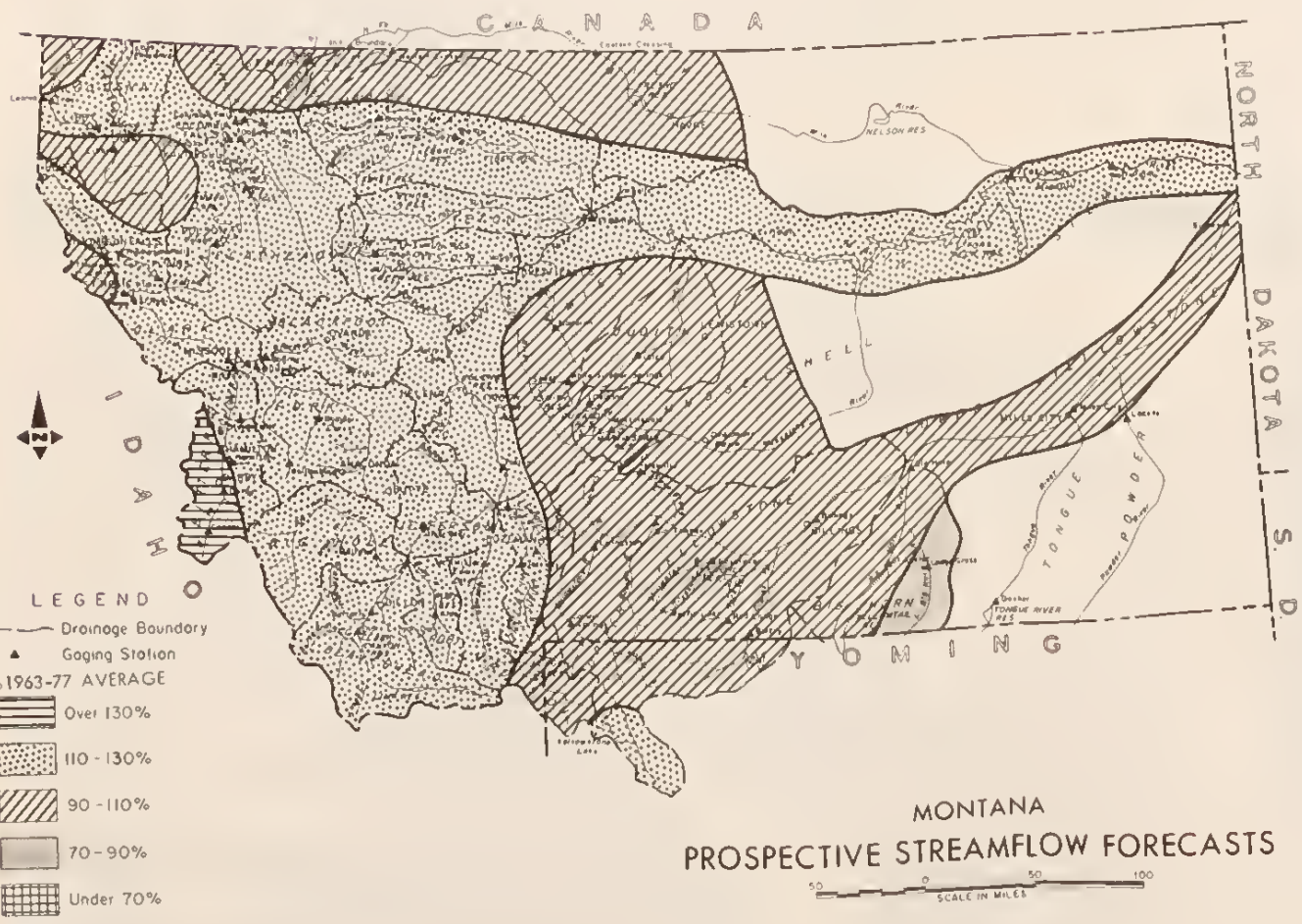
Adequate irrigation supplies are anticipated for most of the state.

Cool temperatures reduce snowmelt

The mountain snowpack is well above average in most drainages due to increases in higher elevation snowpack and below normal melt at lower elevations during April. Most higher elevation snow courses measured near May 1, 1982, show an additional 2 to 5 inches of water stored during the month. Cool temperatures without any prolonged warm periods have reduced the amount of snowmelt at lower elevations.

Some warming in late April and early May has increased snowmelt rates and streams are now starting to rise due to snowmelt runoff from lower elevations.

The large amount of snow in the lower elevations does present some potential for high flows if temperatures are well above average for an extended period or if considerable rainfall occurs at the same time streams are carrying large volumes of snowmelt water. Likewise, warm days and cool nights without prolonged periods of rainfall will permit large volumes of runoff to move downstream without creating any major problems.



MONTANA
PROSPECTIVE STREAMFLOW FORECASTS

Most high elevation valleys are still snow covered with melt just beginning in the lower elevations and on south-facing slopes.

Missouri River & Hudson Bay Drainages

STREAMFLOW FORECASTS

BASIN STREAM and or FORECAST POINT	PERIOD	THIS YEAR Thousand Acre Feet	THIS YEAR % AVG	30 YR AVG Thousand Acre Feet	30 YR AVG % AVG	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST % AVG	30 YR AVG Thousand Acre Feet	30 YR AVG % AVG
		MAY - SEPTEMBER				MAY - JULY			
RED ROCK RIVER near Monida (1)		97.4	110	62.6	88.5	90.0	111	63.4	80.8
BEAVERHEAD RIVER near Grant (2)		154	116	89.5	133	130	118	87.9	110
BEAVERHEAD RIVER at Barratts (2)		205	114		180	174	116		150
RUBY RIVER near Alder		112	117		96	94.5	118		80
BIG HOLE RIVER near Melrose		900	127		710	825	127		648
BOULDER RIVER near Boulder		STREAMGAGING MEASUREMENTS DISCONTINUED							
WILLOW CREEK near Harrison		23.0	121		19.0	20.3	122		16.6
MADISON RIVER near Grayling (3)		500	107	347	466	382	108	262	353
MADISON RIVER near McAllister (4)		884	113	628	783	682	114	513	598
GALLATIN RIVER near Gateway		601	111		542	519	113		458
INFLOW MIDDLE CREEK RESERVOIR near Bozeman (5)		31.5	110		28.7	27.0	110		24.6
HYALITE CREEK near Bozeman (6)		49.3	110		44.9	42.6	111		38.5
GALLATIN RIVER at Logan		636	110		580	547	112		487
MISSOURI RIVER at Toston (7)		2774	120	2502	2,314	2390	121	2303	1,972
SHEEP CREEK near White Sulphur Springs		20.9	98		21.3	17.9	98		18.3
SUN RIVER at Gibson Dam (8)		63.2	116	467	546	580	117	426	497
BELT CREEK near Monarch		137	100		137	127	102		125
MISSOURI RIVER at Fort Benton (9)		4639	128		3,613	3970	128		3,104
TWO MEDICINE CREEK near Browning (10)		260	111		235	248	112		221
BADGER CREEK near Browning		136	110		124	118	110		107
MARIAS RIVER near Shelby		596	115	392	518	550	116	368	474
MISSOURI RIVER at Virgelle (11)		5367	128		4,189	4650	128		3,634
MISSOURI RIVER near Landusky (11)		5787	127		4,553	4990	127		3,925
NORTH FORK MUSSELSHELL RIVER near Delpine		5.4	103		5.3	4.5	102		4.4
SOUTH FORK MUSSELSHELL RIVER above Martinsdale		51.0	92		55.2	47.4	92		51.3
MISSOURI RIVER below Fort Peck Dam (11)		5487	129		4,253	4780	129		3,705
MILK RIVER at Eastern Crossing		208	91		229				
MILK RIVER at Eastern Crossing (12)		42.2	90		47.1				
INFLOW LAKE SAKAKAWEA, ND (11)		13495	116		11,636	12090	116		10,425
SASKATCHEWAN RIVER BASIN									
SWIFTCURRENT CREEK at Sherburne (13)		135	109	110	124	119	110	97.7	108
ST. MARY'S RIVER near Babb (13)		516	108		478	442	109		407

(1) Adjusted for storage rn Lima Reservoir.
(2) Adjusted for storage in Lima and Clark Canyon Reservoirs.
(3) Adjusted for storage in Hebgen Lake.
(4) Adjusted for storage in Hebgen Lake and Ennis Lake.
(5) Sum of West Fork Hyalite Creek and East Fork Hyalite Creek above the Reservoir.
(6) Adjusted for storage in Middle Creek Reservoir.
(7) Adjusted for storage in Lima, Hebgen, Ennis & Clark Canyon Reservoirs.
(8) Adjusted for storage in Gibson Reservoir & diversions.
(9) Adjusted for storage in Lima, Clark Canyon, Hebgen, Ennis, Gibson, Pishkun, Willow Creek & Canyon Ferry Reservoirs.
(10) Adjusted for storage in Two Medicine Reservoir & diversions in Two Medicine Canal.
(11) Adjusted for all upstream reservoirs.
(12) Flow at Eastern Crossing minus St. Mary's Canal.
(13) Adjusted for storage in Lake Sherburne.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

Low elevations above average

Higher elevation snow courses showed increases in water content of from 2 to 5 inches during April. Very little melt was noted at lower elevations and most low elevation snow courses have well above average water content for this time of year.

Warming near the end of April and in early May has started snowmelt in the lower elevations. Many south-facing slopes are beginning to "bare off."

Most of the headwater area has above average snowpack. Many of the smaller mountain ranges in central Montana, from the Bridger Mountains northward, have near average snow conditions. The Snowy Mountains continue to show below average snow storage.

SUMMARY of SNOW MEASUREMENTS
(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF Last Year	Average
Beaverhead	20	281	130
Ruby	11	195	122
Big Hole	21	216	125
Boulder	13	197	127
Jefferson	65	224	126
Madison	29	288	129
Gallatin	21	220	115
Missouri Headwater	115	239	124
West-side Missouri (Toston-Cascade)	9	176	120
Smith	8	178	111
Belt-Arrow	3	331	113
Missouri Main-stem	20	188	115
Teton & Sun	10	496	137
Marias	4	241	123
Marias-Teton-Sun	14	341	130
Judith	10	215	104
Musselshell	11	202	114
Judith-Musselshell	21	208	109
Milk	8	1190	109
Bear Paws	7	5133	84
Missouri (Total)	170	235	122
Saskatchewan			
St Mary's	8	189	106
Bow River in Alberta	12	118	111

WATER SUPPLY OUTLOOK
Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period: Spring Season	Late Season
Beaverhead	Exc	Avg
Ruby	Exc	Avg
Big Hole	Exc	Exc
Boulder	Exc	Avg
Jefferson	Exc	Exc
Madison	Exc	Avg
Gallatin	Exc	Avg
West-Side Missouri	Exc	Avg
Smith-Belt	Avg	Avg
Sun	Exc	Avg
Teton	Exc	Avg
Marias	Exc	Avg
Judith	Avg	Avg
Musselshell	Avg	Avg
Milk	Avg	Avg
Bear Paws	Avg	Avg
St. Mary's	Avg	Avg

PEAK FLOWS
(MAXIMUM MEAN DAILY) (Av. flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET) Forecast Range			Average
MISSOURI RIVER DRAINAGE				
Big Hole River near Melrose	10,000	-	11,500	8,009
Gallatin River near Gateway	5,500	-	7,500	5,369
Gallatin River near Logan	6,000	-	8,000	5,324
Missouri River at Toston	20,000	-	26,000	18,005
Belt Creek near Monarch	1,750	-	2,250	1,742
Marias River near Shelby	6,600	-	8,000	12,720
S. Fk. Musselshell above Martinsdale	750	-	1,000	745

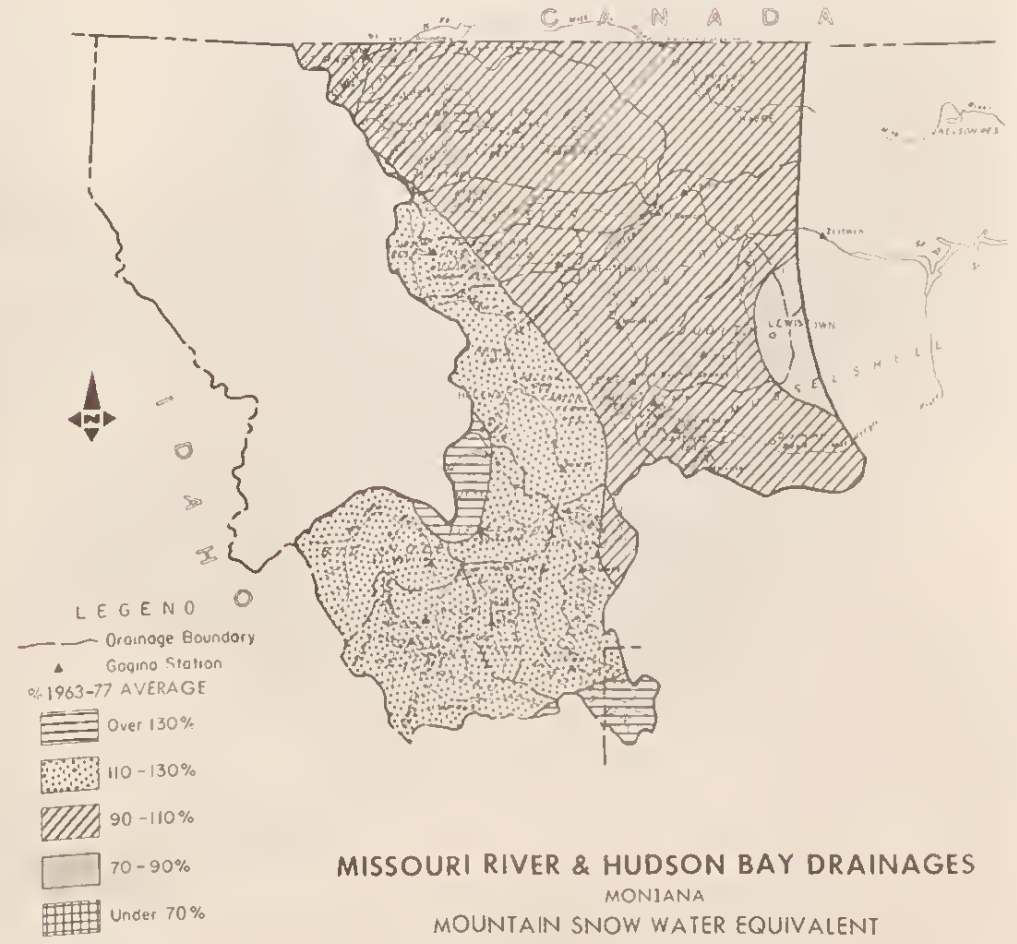
Streamflow forecasts variable

April runoff was above average on the Red Rock and Beaverhead Rivers and below average on other southwestern streams. These flows combined to produce near average runoff at the Missouri River headwaters. Other Missouri tributary streams generally had below average April flows. The below average runoff was due primarily to cool temperatures which retarded low elevation snowmelt.

Spring and summer streamflow is forecast to be near average for central Montana streams and above average in other areas. Some streams and rivers in southwestern portion of the drainage are predicted to have well above average runoff.

With the high percentage of low elevation snowpack present, temperature and rainfall become critical factors in evaluating the potential for high flows during the peak runoff period. As temperatures warm, the low elevation snowmelt runoff will completely fill stream channels until the snow-covered area is reduced to normal levels. Any prolonged period of above normal temperature or heavy rainfall will cause streams to leave their banks. Those who have equipment or livestock in areas subject to high water should be aware of these possibilities.

Irrigation water supplies should be adequate on most streams and stream levels are expected to hold up well into the summer.



MISSOURI RIVER & HUDSON BAY DRAINAGES
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

Yellowstone River Drainage

STREAMFLOW FORECASTS

BASIN, STREAM and of FORECAST POINT	PERIOD	THIS YEAR FORECAST THOUSAND ACRE FEET		PAST RECORD THOUSAND ACRE FEET		THIS YEAR FORECAST		PAST RECORD THOUSAND ACRE FEET	
		Thousand Acre Feet	Percent of Average	Last Year	Average	Thousand Acre Feet	Percent of Average	Last Year	Average
		MAY - SEPTEMBER				MAY - JULY			
YELLOWSTONE RIVER at Corwin Springs		2140	106	1613	2,021	1785	107	1377	1,668
YELLOWSTONE RIVER near Livingston		2480	105		2,363	2055	106		1,941
BOULDER RIVER at Big Timber		395	98		404	363	98		370
STILLWATER near Absarokee (1)		605	95		634	508	96		528
CLARKS FORK RIVER near Belfry		678	109		623	600	110		543
ROCK CREEK near Red Lodge		128	110	120	116	98.0	110	96	89.0
INFLOW COONEY RESERVOIR near Boyd (2)		50.5	90		56.0	40.0	91		44.0
YELLOWSTONE RIVER at Billings		4721	107	3831	4,428	3980	107	3461	3,725
BIGHORN RIVER near St. Xavier (3)		1890	100	1258	1,887	1715	100	1255	1,714
LITTLE BIGHORN RIVER near Hardin		123	73		168	108	73		147
YELLOWSTONE RIVER at Miles City (4)		6800	102		6,636	5850	102		5,737
YELLOWSTONE RIVER near Sidney (5)		7440	103		7,214	6400	103		6,212

(1) Adjusted for storage in Mystic Lake.
(2) Adjusted for storage in Cooney Reservoir.
(3) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake, Pilot Butte and Bighorn Reservoirs
(4) Adjusted for storage in Bull Lake, Buffalo Bill, Boysen, Pilot Butte, Bighorn and Tongue River Reservoirs.
(5) Adjusted for reservoirs shown in (4) and diversions into the Lower Yellowstone Canal

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

Little change in the Yellowstone

The snowpack trends established earlier in the season continue to persist. The upper headwaters of the Yellowstone River in Yellowstone National Park have well above average water stored in the snow. The snowpack is average or above average over most of the remaining drainage except around Red Lodge and in the northern Big Horn Mountains, where below average amounts of water were recorded.

Lower elevations did not experience much melt during April and the snowpack in these areas is well above average for this time of year. Snowpacks at the higher elevations showed increases in water content of from 4 to 6 inches during April.

Presently, snow in the lower elevations is melting and streams are beginning to rise with snowmelt water.

WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period: Spring Season	Late Season
Yellowstone at Livingston	Exc	Exc
Shields	Exc	Avg
Boulder	Exc	Avg
Sweetgrass - Big Timber	Exc	Avg
Stillwater	Avg	Avg
Rock Creek	Avg	Avg
Clark's Fork	Exc	Avg
Yellowstone above Bighorn	Exc	Avg
Bighorn	Avg	Avg
Little Bighorn	Fair	Fair
Tongue	Fair	Fair
Powder	Fair	Fair
Lower Yellowstone	Avg	Avg

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUBWATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF: Last Year	Average
Upper Yellowstone ab Livingston	16	244	114
Shields	7	193	107
Boulder & Stillwater	6	231	106
Rock Creek & Clark's Fork	16	211	100
Yellowstone (ab Bighorn River)	45	223	107
Bighorn/Wyoming	26	255	102
Little Bighorn	4	279	70
Bighorn (Total)	30	257	98
Tongue	8	286	80
Powder	5	757	90
Yellowstone (Total)	88	240	102

Near normal runoff expected

Runoff during April was 10 to 20 percent below average in most drainages reflecting the cool weather and less than normal melt.

Forecasts for the spring and summer remain near average for all streams except for Red Lodge Creek and Little Bighorn River where below average flows are expected from the snowmelt runoff.

The water supply is very good in most areas, with more than adequate early spring runoff expected. The good high elevation snow coupled with the late spring should hold streamflow up well into the summer.

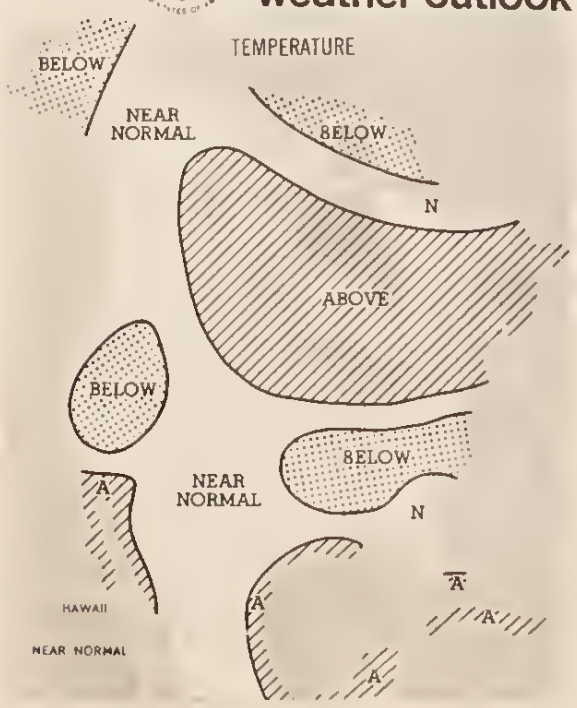
Adequate irrigation water supplies are anticipated for most streams.

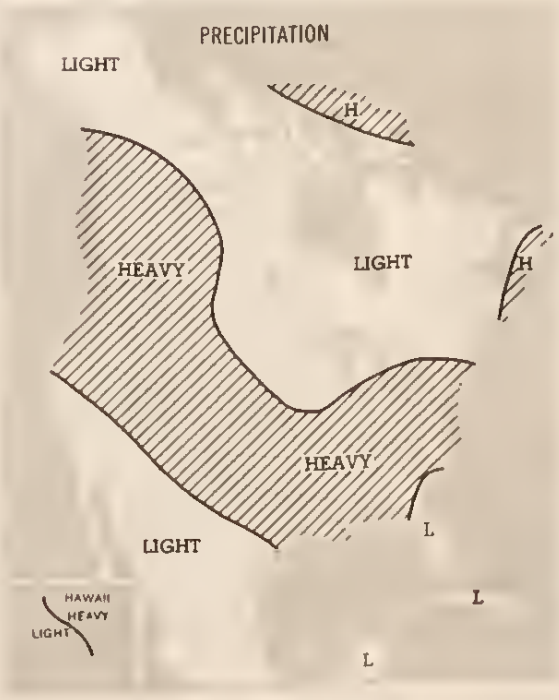
PEAK FLOWS (MAXIMUM MEAN DAILY) (Av. flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET) Forecast Range		Average
YELLOWSTONE RIVER DRAINAGE			
Yellowstone River at Livingston	21,000	25,000	20,560
Boulder River near Big Timber	5,000	6,000	5,100
Stillwater River near Absarokee	6,000	7,500	6,261
Clarks Fork River near Belfry	7,500	9,000	7,342
Rock Creek near Red Lodge	1,200	1,500	1,067
Yellowstone River at Billings	43,000	53,000	39,188

average monthly weather outlook

FOR MAY 1982





River channels are opening to accept the snowmelt water. Soon, water levels will swell to carry the annual peak flow downstream.

SNOW SURVEY DATA

SNOW May 1, 1982

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD Water Content (Inches) Last Year	Average
ABUNDANCE LAKE	8800	4/26	74	29.4	16.0	25.0
AMBROSE	6480	4/27	48	19.0	4.8	14.6
ARCH FALLS	7350	4/23	48	17.7	6.2	16.7
ASHLEY DIVIDE	4820	4/27	14	4.6	.0	-
ASHLEY LAKE	4000	4/27	15	4.6	.0	-
BADGER PASS	6900	4/30	111	51.6	30.6	45.9
BADGER PASS PILLOW	6900	4/30	SP	46.4	27.4	-
BALD EAGLE PEAK	5700	4/26	172	81.9	45.4	65.4
BALD RIDGE	7500	4/30	45	17.0	6.8	14.7
BANFIELD MOUNTAIN	5600	4/26	75	31.8	13.5	24.4
BANFIELD MOUNTAIN PILLOW	5600	4/26	SP	29.3	11.1	20.5
BAREE CREEK	5500	4/28	112	51.5	27.0	49.5
BAREE MIDWAY	4600	4/28	89	38.6	12.2	35.1
BAREE TRAIL	3800	4/28	9	3.7	.0	1.8
BARKER LAKES PILLOW	8250	5/01	SP	20.2	13.4	-
BASIN CREEK	7180	4/29	45	14.0	8.1	10.6
BASIN CREEK PILLOW	7180	5/01	SP	13.6	9.4	-
BASSOO PEAK	5150	4/30	11	4.4	.0	7.7
BEAGLE SPRINGS	8850	4/27	45	15.2	7.8	-
BEAGLE SPRINGS PILLOW	8850	5/01	SP	13.0	6.5	-
BEAR BASIN	8150	4/27	70	28.5	14.6	25.6
BEAR PAW SKI AREA	5200	4/30	16	5.8	.0	4.9
BEAVER LAKE	5900	4/30	71	31.5	13.2	25.9
BIG CREEK	6750	5/01	118	55.4	46.0	52.2
BIG SKY	7700	4/27	62	25.2	8.6	19.4
BIG SKY MEADOW	6350	4/27	31	11.3	.0	3.9
BIG SNOWY	7150	4/28	59	22.0	17.2	28.0
BLACK BEAR	7950	4/27	129	59.6	25.3	45.4
BLACK BEAR PILLOW	7950	4/27	SP	55.8	21.0	40.9
BLACK MOUNTAIN	7750	4/29	65	23.1	17.4	-
BLACK PINE	7100	4/29	52	19.4	5.0	16.2
BLACK PINE PILLOW	7100	4/29	SP	20.6	7.3	16.7
BLOODY DICK	7600	4/27	48	18.7	8.4	15.7
BLOODY DICK PILLOW	7600	4/27	SP	16.9	4.6	-
BLUE LAKE	5900	4/30	75	33.8	16.0	26.1
BOTS SOTS	8000	4/27	24	8.2	.0	12.8
BOULDER MOUNTAIN	7950	4/26	71	27.1	18.6	23.4
BOULDER MOUNTAIN PILLOW	7950	5/01	SP	30.1	19.6	-
BOX CANYON	6670	4/30	29	10.9	.0	8.5
BOX CANYON PILLOW	6670	5/01	SP	9.5	0.0	-
BOXELDER CREEK	5100	4/30	15	5.2	.0	6.4
BRANHAM LAKES	8850	4/29	99	42.8	28.6	36.4
BRIDGER BOWL	7250	4/29	78	32.7	22.3	34.3
BRIDGER BOWL PILLOW	7250	4/29	SP	33.0	21.3	32.8
BRISTOW CREEK	3900	4/26	17	7.9	.0	2.1
BRUSH CREEK TIMBER	5000	4/28	26	9.4	.0	8.1
BULL MOUNTAIN	6600	4/26	27	9.1	.0	3.3
CABIN CREEK	5200	4/27	16	6.2	.0	2.2
CALL ROAD	8050	4/28	49	17.0	7.8	14.6
CALVERT CREEK	6450	4/28	40	14.0	.0	11.3
CALVERT CREEK PILLOW	6450	4/28	SP	10.1	0.0	1.9
CAMP MISERY	6400	4/27	134	57.6	50.5	55.4
CAMP SENIA	7890	4/27	22	5.8	.0	10.9
CARROT BASIN	9000	4/26	127	54.3	27.3	44.4
CARROT BASIN PILLOW	9000	4/26	SP	38.5	21.9	33.5
CASHE CREEK PILLOW	7800	5/01	SP	13.4	4.5	-
CEDAR GROVE	4100	4/26	35	14.3	.0	7.5
CHESSMAN RESERVOIR	6200	4/27	16	5.0	.0	3.5
CHICKEN CREEK	4060	4/27	27	11.1	.0	-
CLOVER MEADOW	8600	4/28	67	25.4	16.6	21.7
CLOVER MEADOW PILLOW	8600	5/01	SP	23.5	15.1	-
COLE CREEK	7850	4/28	58	19.8	12.6	24.8
COLE CREEK PILLOW	7850	4/28	SP	18.7	10.0	22.5
COLLEY CREEK	6300	4/27	32	10.5	.0	6.3
COMBINATION	5600	4/29	20	7.2	.0	3.0
COMBINATION PILLOW	5600	4/29	SP	6.7	0.2	2.9
COOKE STATION	8150	4/29	67	28.0	11.7	22.7
COPPER BOTTOM	5200	4/30	23	9.9	.0	6.0
COPPER BOTTOM PILLOW	5200	4/30	SP	13.1	0.2	7.7
COPPER CAMP	6950	4/30	81	38.6	19.0	34.3
COPPER CAMP PILLOW	6950	4/30	SP	44.9	20.1	37.9
COPPER CREEK	5700	4/30	37	17.5	.0	11.7
COPPER LAKE CREEK	6100	4/30	66	30.4	10.8	25.2
COPPER MOUNTAIN	7700	5/01	44	16.7	9.3	11.9
COTTONWOOD CREEK	6400	4/29	39	14.0	2.6	8.4
COYOTE HILL	4200	4/26	18	8.0	.0	3.8
CRYSTAL LAKE	6100	4/28	38	13.5	4.8	15.2
CRYSTAL LAKE PILLOW	6100	5/01	SP	10.0	5.1	-
DAD CREEK LAKE	8400	4/27	61	22.2	12.4	18.1
DAISY PEAK	7600	4/27	44	14.8	2.9	11.0
DALY CREEK	5780	4/29	49	18.7	3.8	13.8
DALY CREEK PILLOW	5780	5/01	SP	14.8	0.0	-
DARKHORSE LAKE	8600	4/27	90	37.7	20.2	31.8
DARKHORSE LAKE PILLOW	8600	5/01	SP	35.9	19.6	-
DAVIS CREEK	5400	4/26	69	31.8	17.2	24.5
DEADMAN CREEK	6450	4/29	28	10.4	.6	10.1
DEADMAN CREEK PILLOW	6450	4/29	SP	11.4	0.0	7.6
DESERT MOUNTAIN	5600	4/26	44	18.6	10.8	15.1
DEVILS SLIDE	8100	4/28	79	30.8	15.8	29.3
DISCOVERY BASIN	7050	4/29	41	15.4	6.9	11.2
DIVIDE	7900	4/28	50	18.0	3.8	12.0
DIVIDE PILLOW	7900	4/28	SP	19.2	6.3	13.9
DIX HILL	6400	5/02	22	9.5	2.5	5.1
EAST BOULDER S	9250	5/01	99	41.5A	19.0	36.5
EAST FORK R.S.	5400	4/27	8	3.4	.0	0.8
ELK HORN SPRINGS	7800	4/26	38	12.7	1.0	9.7
ELK PEAK	8000	4/27	60	21.9	16.0	21.4
EMERY CREEK	4350	4/26	39	15.9	7.0	6.7
EMERY CREEK PILLOW	4350	4/26	SP	16.3	3.3	-
FATTY CREEK	5500	5/01	69	31.4	20.2	25.5
FISH CREEK	8000	4/29	53	17.8	10.7	12.7
FISHER CREEK	9100	4/29	119	49.2	26.6	45.1
FISHER CREEK PILLOW	9100	4/29	SP	47.3	24.0	41.9
FIVE-BULL	5700	4/30	17	6.8	.0	5.3
FLATTOP MOUNTAIN PILLOW	6300	5/01	SP	51.7	45.5	54.8
FLEECER RIDGE	7500	4/26	44	15.4	2.9	10.6
FROHNEN	8280	4/26	61	22.8	14.4	20.8
FOUR MILE	6900	4/26	34	12.0	1.6	8.5
FOURTH OF JULY	3450	4/27	0	.0	.0	-
FRED BURR PASS	8000	4/26	87	35.4	24.0	31.5
FREIGHT CREEK	6000	4/30	48	21.1	4.4	15.9
FRIDAY HILL	4620	4/27	59	24.6	0.6	-
FROHNER MEADOWS	6480	4/28	31	10.0	.7	8.1
FROHNER MEADOWS PILLOW	6480	4/28	SP	11.7	5.5	9.2
GARVER CREEK	4250	4/26	23	10.8	.9	5.4
GARVER CREEK PILLOW	4250	4/26	SP	10.8	0.5	4.9
GIBBONS PASS	7100	4/27	72	31.6	17.2	25.3
GOAT MOUNTAIN	7000	4/30	37	13.1	.0	10.4
GOLD STONE	8100	4/27	62	24.4	14.3	20.5
GRASSHOPPER	7000	4/27	24	8.7	.9	6.0
GRAVE CREEK	4300	4/26	40	17.4	4.8	16.0
GRAVE CREEK PILLOW	4300	4/26	SP	15.6	1.4	8.6
GRIFFIN CREEK DIVIDE	5150	4/30	29	11.9	.5	8.5
GRIZZLY PEAK	8640	4/28	54	17.9	10.4	23.8
GUNSIGHT LAKE	6300	4/30	108	50.5	29.1	45.1
HAND CREEK	5030	4/28	39	14.8	6.4	7.7
HAND CREEK PILLOW	5030	5/01	SP	15.2	5.2	-
HAWKINS LAKE	6450	4/26	99	42.2	26.5	36.0
HAWKINS LAKE PILLOW	6450	4/26	SP	36.1	26.1	33.7
HEART LAKE TRAIL	4800	4/30	54	25.2	.0	19.1
HEBGEN DAM	6550	4/28	35	13.3	.0	8.3
HELL ROARING DIVIDE	5770	4/30	82	35.4	23.6	33.5
HERRIG JUNCTION	4850	4/27	78	34.4	18.0	-
HOLBROOK	4530	4/28	14	5.0	.0	2.8
HOOD MEADOW	6600	4/28	39	14.2	2.4	13.3
HOODOO BASIN	6000	4/30	148	68.5	33.4	55.6
HOODOO BASIN PILLOW	6000	5/01	SP	60.4	33.1	52.8
HOODOO CREEK	5900	4/30	136	61.8	30.1	52.0
ICEBERG LAKE #3	5600	4/28	81	33.1	17.3	35.1
INDEPENDENCE	7850	4/30	50	20.4	7.8	20.5
INTERGAARD	6450	4/29	35	12.2	.0	9.5
JAHNKE LAKE TRAIL	7200	4/27	42	15.6	4.4	9.7
JOHNSON PARK	6450	4/27	21	6.4	.0	2.8
JOSEPHINE LOWER #9	4900	4/27	51	19.4	6.0	19.1
KEELER CREEK	3300	4/26	10	4.9	.0	1.8
KINGS HILL	7500	4/29	52	18.6	11.6	17.9
KIWANIS CAMP	3720	4/30	0	.0	.0	0.6
KRAFT CREEK PILLOW	4750	5/01	SP	13.6	0.0	-
LAKE CREEK	6100	4/28	25	7.8	.0	4.6
LAKEVIEW CANYON	6930	4/30	41	14.8	4.4	13.3
LAKEVIEW RIDGE	7400	4/30	38	14.1	2.6	11.3
LAKEVIEW RIDGE PILLOW	7400	5/01	SP	10.8	1.9	-
LEMHI PASS	7480	4/27	33	11.3	.0	9.2
LEMHI RIDGE	8100	4/27	39	13.9	2.9	10.6
LEMHI RIDGE PILLOW	8100	4/27	SP	15.4	6.0	10.2
LICK CREEK	6860	4/28	37	13.2	2.8	11.2
LICK CREEK PILLOW	6860	4/28	SP	11.2	3.4	10.1
LITTLE PARK	7400	4/27	59	22.3	10.4	19.0
LOGAN CREEK	4300	4/28	18	6.3	.0	3.0
LONE MOUNTAIN	8880	4/27	84	35.4	16.5	28.1
LOST HORSE	5940	4/28	104	48.9	13.6	35.8
LOST SOUL	4800	4/26	50	20.8	4.7	9.2
LOWER TWIN	7900	4/26	76	31.0	19.0	25.8
LOWER TWIN PILLOW	7900	5/01	SP	25.0	19.0	-
LUBRECHT FLUME	4800	5/01	2	.7	.0	0.9
LUBRECHT FLUME PILLOW	4800	5/01	SP	2.8	0.0	0.6
LUBRECHT FOREST # 3	5450	4/29	22	8.4	.0	4.2
LUBRECHT FOREST # 4	4650	4/29	1	.2	.0	0.3
LUBRECHT FOREST # 6	4040	5/01	1	.3	.0	0.1
LUBRECHT HYDROPLOT	4200	5/01	0	.0	.0	0.3
MADISON PLATEAU	7750	4/27	78	33.2	10.1	23.5
MADISON PLATEAU PILLOW	7750	4/27	SP	33.2	10.9	24.9
MANY GLACIER	4960	4/29	62	23.4	.0	-
MANY GLACIER PILLOW	4960	5/01	SP	19.5	0.0	-
MARIAS PASS	5250	5/04	54	24.0	3.0	17.8
MAYNARD CREEK	6210	4/29	45	18.2	6.8	16.5
MAYNARD CREEK PILLOW	6210	4/29	SP	13.5	7.8	13.8
MIDDLE MILL CREEK	7850	4/29	52	20.8	12.0	19.2
MILL CREEK	7500	4/27	48	16.1	.0	15.3
MINERAL CREEK	4000	5/04	43	21.0	5.2	14.2
MONUMENT PEAK	8800	4/30	87	36.5	18.4	32.7
MONUMENT PEAK PILLOW	8800	5/01	SP	28.0	15.5	-
MOULTON RESERVOIR	6850	4/27	32	10.5	.0	-
MOUNT ALLEN #7	5700	4/27	125	53.8	31.3	49.6
MOUNT LOCKHART	6400	4/26	76	32.0	8.8	23.3
MOUNT LOCKHART PILLOW	6400	4/26	SP	30.1	11.9	22.6
MUDD LAKE	7650	4/28	62	27.0	12.1	22.5
MULE CREEK	8300	4/26	62	22.7	10.7	-
MULE CREEK PILLOW	8350	5/01	SP	21.8	7.9	-
NEVADA CREEK	6480	4/30	41	17.4	8.0	-
NEVADA CREEK PILLOW	6480	5/01	SP	19.0	7.9	-
NEWTON MOUNTAIN	5600	4/27	108	46.0	28.5	-
NEZ PERCE CAMP	5650	4/25	53	22.6	6.0	13.6
NEZ PERCE CAMP PILLOW	5650	4/25	SP	22.0	4.7	-
NEZ PERCE CREEK	6500	5/01	23	8.1	.0	5.3
NEZ PERCE PASS	6570	4/25	59	25.0	6.3	17.4
NOISY BASIN	6040	4/27	125	52.9	49.3	52.1
NOISY BASIN PILLOW	6040	5/01	SP	48.3	48.7	45.5
NORTH FK. ELK CREEK	6250	4/29	47	18.8	0.0	11.5
NORTH FK. ELK CREEK PILLOW	6250	4/29	SP	18.5	-	11.8
NORTH FORK JOCKO	6330	5/01	115	55.3	33.7	49.1
NORTH MEADOW	7500	4/26	40	12.8	4.4	11.4
NORTHEAST ENTRANCE	7400	5/02	26	9.0	.0	8.5
NORTHEAST ENTRANCE PILLOW	7400	5/02	SP	8.8	0.0	8.2
NOTCH	8500	4/28	67	25.0	14.0	20.3
OPHIR PARK	7150	5/02	52	21.6	14.8	21.3
PALISADE CREEK	8250	4/28	95	42.4	23.4	35.8
PETERSON MEADOWS	7200	4/28	42	14.0	8.0	12.2
PETERSON MEADOWS PILLOW	7200	4/28	SP	14.8	7.8	13.0
PICKET PIN D	9450	5/01	77	32.0A	16.5	32.4
PICKFOOT CREEK	6650	4/26	36	11.5	2.0	-
PICKFOOT CREEK PILLOW	6650	5/01	SP	11.9	0.1	-
PICNIC GROUNDS	6500	4/29	21	7.0	.0	2.9
PIEGAN PASS #6	5500	4/27	109	48.9	23.0	43.0
PIKE CREEK PILLOW	5930	5/01	SP	37.5	14.0	-
PIPESTONE PASS	7200	5/01	24	8.6	.0	6.5
PLACER BASIN F	8830	5/01	63	27.0A	11.0	27.1
PLACER BASIN PILLOW	8830	5/01	SP	18.7	13.2	-

SNOW SURVEY DATA

* * CONTINUED * *

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DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR Date of Survey	THIS YEAR Snow Depth (Inches)	THIS YEAR Water Content (Inches)	PAST RECORD Water Content (inches) Last Year	PAST RECORD Water Content (inches) Average
POORMAN CREEK	5100	4/26	94	45.7	18.8	33.6
POORMAN CREEK PILLOW	5100	4/26	SP	43.6	14.5	32.1
PORCUPINE	6500	4/30	29	10.3	.4	8.5
PORCUPINE PILLOW	6500	4/30	SP	7.6	0.0	-
POTOMAGETON PARK	7150	4/28	44	17.0	.0	12.2
PTARMIGAN	5800	4/28	102	42.5	23.7	42.2
RED MOUNTAIN	6000	4/30	58	23.2	9.6	20.5
RED TOP	5260	4/27	87	36.8	19.6	-
ROCK CREEK	5600	4/28	17	6.7	.0	9.1
ROCK CREEK MEADOWS	8160	4/28	82	32.3	13.2	24.5
ROCKER PEAK	8000	4/28	54	21.2	16.3	18.3
ROCKER PEAK PILLOW	8000	4/28	SP	22.2	16.4	19.3
ROCKY BOY	4700	4/30	0	.0	.0	2.1
ROCKY BOY PILLOW	4700	4/30	SP	4.4	0.3	2.6
SACAJAWEA	6550	4/29	45	18.1	5.8	15.8
SADDLE MOUNTAIN	7940	4/27	87	37.5	22.2	30.0
SADDLE MOUNTAIN PILLOW	7940	4/27	SP	35.9	20.2	30.7
SAND BASIN LOWER	6480	4/29	46	17.0	0.0	-
SENTINEL CREEK	8300	4/28	82	34.1	18.7	27.0
SHOWER FALLS	8100	4/28	81	32.4	17.1	32.2
SHOWER FALLS PILLOW	8100	5/01	SP	33.4	19.0	31.9
SILVER RUN	6630	4/27	6	2.4	.0	4.9
SILVER RUN PILLOW	6630	4/27	SP	.0	0.0	-
SKALKAHO SUMMIT	7260	4/26	88	37.8	18.2	29.3
SKALKAHO SUMMIT PILLOW	7260	5/01	SP	38.5	16.6	-
SKYLARK TRAIL PILLOW	6200	5/01	SP	49.5	19.4	-
SLAG-A-MELT LAKE	8750	4/27	92	38.4	23.4	30.2
SLIDE ROCK MOUNTAIN	7100	4/30	59	23.2	9.2	20.9
SMUGGLER MINE	6960	4/29	37	13.6	3.0	10.8
SOUTH FORK SHIELDS	8100	4/30	76	32.0	24.5	30.2
SOUTH FORK SHIELDS PILLOW	8100	4/30	SP	22.3	16.4	-
SPOTTED BEAR MOUNTAIN	7000	4/30	43	17.3	1.1	11.7
SPUR PARK	8100	4/29	71	29.2	18.6	26.0
SPUR PARK PILLOW	8100	4/29	SP	27.0	18.6	25.6
STAHL PEAK	6050	4/26	104	45.6	37.4	46.0
STAHL PEAK PILLOW	6050	4/26	SP	40.1	33.2	36.1
STAR LAKE E	9650	5/01	127	53.5A	31.0	51.1
STEMPLE PASS	6600	4/26	45	14.4	5.6	12.0
STORM LAKE	7780	4/28	48	17.3	11.8	17.5
STRYKER BASIN	6180	4/27	96	41.7	29.0	-
STUART MILL	6500	4/29	23	8.2	.0	5.9
STUART MOUNTAIN	7400	4/30	87	39.5	25.2	36.1
SUCKER CREEK	3960	4/30	0	.0	.0	0.3
SUGARLOAF	7350	4/29	40	13.5	2.1	10.0
TAYLOR ROAD	4080	4/30	0	.0	.0	1.3
TEN MILE LOWER	6600	4/27	32	10.4	2.7	7.1
TEN MILE MIDDLE	6800	4/27	50	16.4	11.0	14.1
TEN MILE UPPER	8000	4/27	55	19.6	16.0	17.1
TEPEE CREEK	8000	4/28	66	22.6	11.0	18.6
TEPEE CREEK PILLOW	8000	4/24	SP	18.8	7.8	14.9
TIMBERLINE CREEK	8850	4/27	51	17.4	9.3	21.3

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TRAIL CREEK	7090	4/27	37	13.0	.0	7.6
TRINKUS LAKE	6100	5/01	116	53.8	37.6	47.6
TRUMAN CREEK	4060	4/30	0	.0	.0	-
TV MOUNTAIN	6800	4/30	54	23.5	11.4	21.7
TWELVEMILE CREEK	5600	4/28	60	27.2	.2	17.4
TWELVEMILE CREEK PILLOW	5600	5/01	SP	23.5	0.0	15.6
TWENTY-ONE MILE	7150	4/27	58	22.4	4.8	18.6
TWIN CREEKS	3580	4/30	21	9.2	.0	2.7
TWIN LAKES	6510	4/28	127	60.4	26.0	47.4
TWIN LAKES PILLOW	6510	4/28	SP	56.2	24.0	44.3
UPPER HOLLAND LAKE	6200	5/01	92	44.0	22.9	39.5
WALDRON	5600	4/26	32	12.0	.0	6.1
WALDRON PILLOW	5600	5/01	SP	10.5	0.0	7.8
WARM SPRINGS	7800	4/26	70	27.5	18.3	-
WARM SPRINGS PILLOW	7800	4/26	SP	29.5	19.6	-
WEASEL DIVIDE	5450	4/26	95	42.2	26.6	36.9
WEST YELLOWSTONE	6700	4/27	40	13.1	.0	9.1
WEST YELLOWSTONE PILLOW	6700	4/27	SP	13.6	0.0	6.8
WHISKEY CREEK	6800	4/27	68	28.4	.0	19.8
WHISKEY CREEK PILLOW	6800	4/27	SP	25.3	3.8	16.7
WHITE MILL	8700	4/29	92	37.1	19.2	31.9
WHITE MILL PILLOW	8700	4/29	SP	34.4	18.5	28.1
WHITE PINE RIDGE	8850	4/27	31	9.2	3.0	7.0
WILLOW CREEK	6500	4/28	25	8.3	.0	4.9
WOOD CREEK	5960	4/30	35	14.0	.8	-
WOOD CREEK PILLOW	5960	5/01	SP	15.8	1.2	-
WRONG CREEK	5700	4/28	38	16.6	1.1	11.4
WRONG RIDGE	6800	4/29	59	25.0	8.7	21.4

BRITISH COLUMBIA

BEAVERFOOT (BC)	6200	4/26	35	10.9	8.7	9.3
FERNIE (BC)	3510	4/27	16	6.0	.0	2.3
FERNIE EAST (BC)	4100	4/27	39	15.8	8.0	8.0
FERNIE NE (BC)	3510	4/27	26	9.9	1.1	3.7
FIDELITY MOUNTAIN (BC)	6130	4/29	130	54.9	47.6	55.1
FIELD (BC)	4200	4/29	16	5.2	1.3	1.2
FLOE LAKE (BC)	6860	4/26	89	36.5	-	34.2
GLACIER (BC)	4100	4/29	77	34.1	28.2	28.1
GRAY CREEK LOWER (BC)	5080	4/30	56	22.3	15.9	19.9
GRAY CREEK UPPER (BC)	6260	4/30	91	37.2	30.0	34.1
KICKING HORSE (BC)	5410	4/29	45	16.3	14.4	12.7
KIMBERLEY LOWER VOR (BC)	4490	4/28	15	5.8	0.0	1.2
KIMBERLEY MIDDLE VOR (BC)	5510	4/28	39	13.7	7.3	10.5
KIMBERLEY UPPER VOR (BC)	7020	4/28	64	22.7	17.6	22.4
MARBLE CANYON (BC)	4990	4/28	42	14.2	13.9	12.8
MORRISSEY RIDGE (BC)	6100	4/26	78	31.6	24.6	28.9
MOUNT ABBOT (BC)	6490	4/29	143	60.6	50.6	55.3
MOUNT ASSINIBOINE (BC)	7310	4/26	75	26.1	22.2	24.5
MOUNT JOFFRE (BC)	5740	4/26	53	18.2	10.1	15.5
MOYIE MOUNTAIN (BC)	6360	4/29	51	16.4	11.9	17.1
SINCLAIR PASS (BC)	4490	4/29	20	5.4	3.9	2.4
SULLIVAN MINE (BC)	5080	4/28	39	14.7	8.4	11.7
THUNDER CREEK (BC)	6590	4/26	41	12.4	10.1	13.0
UPPER ELK RIVER (BC)	4400	4/29	19	4.4	.0	1.1
VERMONT CREEK (BC)	4990	4/26	53	24.8	11.5	20.7

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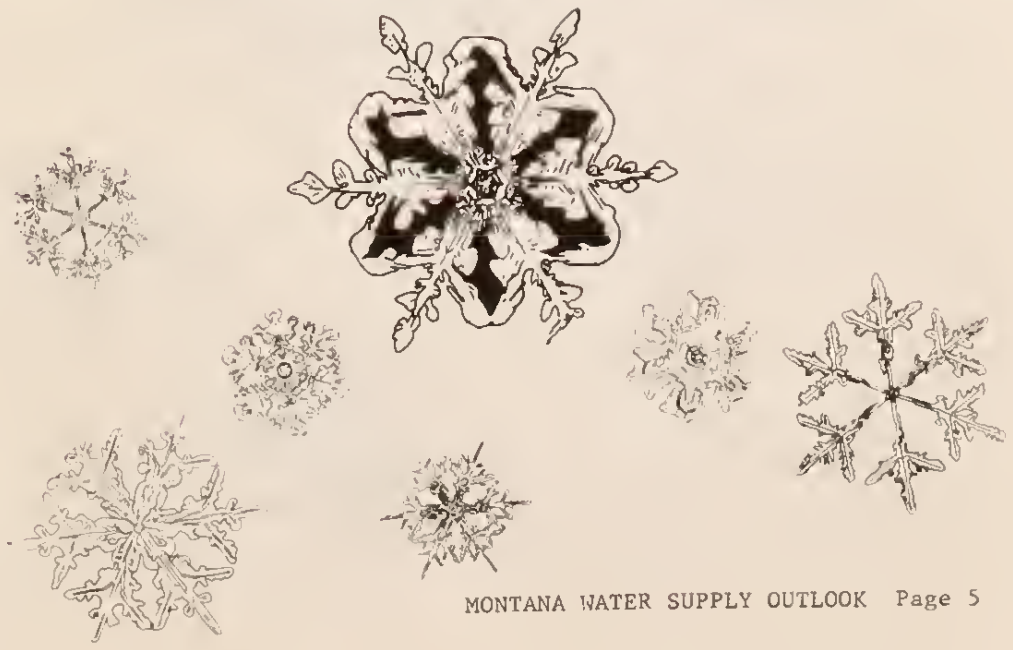
ALBERTA						
AKAMINA (AL)	5810	4/28	68	27.2	18.6	13.7
ALLISON PASS (AL)	6490	4/26	68	21.0	-	-
BOW RIVER SUMMIT (AL)	6660	4/29	48	15.6	17.3	14.2
CUTHEAD LAKE (AL)	7250	4/28	51	18.3	15.4	16.5
HIGHWOOD SUMMIT BUSH (AL)	7250	4/27	53	18.8	14.8	18.4
KATHERINE LAKE (AL)	7810	4/28	62	21.3	-	-
LARCH VALLEY (AL)	7740	4/29	69	21.5	21.5	18.6
LEE CREEK Q (AL)	4890	4/26	19	6.5	-	-
LITTLE ELBOW SUMMIT (AL)	7090	4/27	46	15.1	10.2	12.2
MIST CREEK (AL)	5740	4/27	28	9.2	0.0	7.8
MOUNT SKOKI (AL)	6740	4/28	50	16.3	15.4	14.2
MUD LAKE (AL)	6200	4/27	52	18.9	11.9	14.1
NIGEL CREEK (AL)	6400	4/29	49	16.0	18.8	17.4
PTARMIGAN HUT (AL)	7150	4/28	54	17.5	17.6	15.8
SUNSHINE VILLAGE (AL)	7300	4/29	80	28.7	23.3	26.1
SUNWAPTA FALLS (AL)	4590	4/29	25	7.8	6.4	6.8
THREE ISLE LAKE (AL)	7090	4/27	77	29.0	-	24.4
IDAHO						
ABOVE BURKE (ID)	4100	4/29	48	20.6	4.6	19.7
BEAR MOUNTAIN (ID)	5400	4/26	171	83.9	46.4	67.7
BIG SPRINGS (ID)	6500	4/30	47	20.6	.0	17.7
HALVERSON CREEK (ID)	4850	4/26	144	69.7	41.1	43.5
ISLAND PARK (ID)	6290	4/30	35	15.7	.0	11.4
LOLO PASS (ID)	5230	4/30	74	33.2	9.3	31.4
LOOKOUT (ID)	5250	4/29	93	40.4	14.2	35.4
MOOSE CREEK (ID)	6200	4/30	51	21.2	5.0	16.6
SAVAGE PASS (ID)	6170	4/28	89	40.3	17.3	29.3
SAWTELL MOUNTAIN (ID)	8720	4/30	126	56.4	26.9	37.1
SMITH CREEK (ID)	4800	4/29	122	58.0	36.8	47.4
TARGHEE PASS (ID)	6980	4/30	43	17.3	.0	16.2
VALLEY VIEW (ID)	6680	4/30	48	21.1	.0	14.5
WHITE ELEPHANT (ID)	7710	4/30	90	38.0	12.5	25.2
WYOMING						
BALD MOUNTAIN (WY)	9380	4/27	75	26.6	13.0	31.1
BURGESS R.S. (WY)	7880	4/28	26	7.1	.9	11.2
CANYON (WY)	7940	4/30	EST	24.2	0.0	16.9
CANYON PILLOW (WY)	7940	4/30	SP	24.2	-	-
EAST ENTRANCE (WY)	6960	5/03	18	7.1	.0	4.0
FIVE SPRINGS FALLS (WY)	7620	4/30	18	4.4	.0	8.3
LAKE CAMP (WY)	7780	5/01	36	10.6	-	8.8
LUPINE CREEK (WY)	7380	5/02	31	11.0	.0	8.9
NORRIS BASIN (WY)	7500	5/01	33	13.0	.0	8.6
OLD FAITHFUL (WY)	7400	5/02	46	17.1	.0	-
STEAMBOAT POINT (WY)	7560	4/28	22	6.5	0.1	12.9
SYLVAN LAKE PILLOW (WY)	8420	5/03	SP	30.8	10.5	-
SYLVAN PASS (WY)	7100	5/03	31	11.2	.0	11.0
TOGWOTEE PASS (WY)	9580	4/30	102	45.5	21.4	34.4
WOLVERINE (WY)	7650	4/30	40	14.2	4.0	12.3
YOUNTS PEAK PILLOW (WY)	8350	5/02	SP	27.1	-	-

Average based on 1963-77 period. A - Aerial observation; water content estimated.
SP - Snow Pillow observation; water content only.

Snow on winter range is shallow permitting animals to secure food.



Columbia River Drainage

STREAMFLOW FORECASTS

BASIN: STREAM and FORECAST POINT	MAY - SEPTEMBER			MAY - JULY				MAY - JUNE			
										THOUSANDS OF ACRE-FEET	
										Forecast Range	Average
KOOTENAI RIVER below Libby Dam (1)	7,660	112	6,241	6,814	6,470	113	5,031	5,746			
FISHER RIVER near Libby	210	106		199	194	106		183			
YAAK RIVER near Troy	472	109		434	448	109		411			
KOOTENAI RIVER at Leonia (1)	9,160	113	7,185	8,116	7,900	113	5,845	6,366	6,100	113	3,817	5,402
INFLOW MOULTON RESERVOIR nr BUTTE (Million Gallons)			319		322	130	297	248	288	130	271	222
WARM SPRINGS CREEK AT MEYERS DAM near Anaconda (2)	54.5	113		48.1	44.0	114		38.6				
FLINT CREEK near Southern Cross (3)	19.2	117	21.9	16.4	15.9	119	18.4	13.4				
FLINT CREEK below Boulder Creek (4)	80.6	115		70.1	62.0	116		54.5				
INFLOW LOWER WILLOW CREEK RESERVOIR near Hall (5)	18.5	129		14.3	17.6		11.6	13.5				
MIDDLE FORK ROCK CREEK near Philipsburg	94.0	126		74.9	85.2	127		67.1				
NEVADA CREEK near Finn	24.5	127		19.3	22.6	129		17.5				
BLACKFOOT RIVER near Bonner	1,040	116		899	935	117		802	795	118		676
CLARK FORK RIVER above Milltown (6)	900	123		734	770	124		621	630	125		505
CLARK FORK RIVER above Missoula	1,940	119	1,352	1,633	1,705	120	1,182	1,423	1,425	121	970	1,180
WEST FORK BITTERROOT RIVER near Conner (7)	230	135		170	213	137		155				
BITTERROOT RIVER near Darby	720	131	397	549	660	132	353	499	570		291	427
SKALKAHO CREEK near Hamilton	66.2	121		54.5	57.3	122		47.0				
BURNT FORK CREEK near Stevensville (8)	43.8	119		36.8	38.3	121		31.7				
BITTERROOT RIVER at Missoula (9)	1,770	126		1,409	1,625	127		1,282	1,370			1,075
CLARK FORK RIVER below Missoula	3,710	122		3,042	3,330	123		2,705	2,795	124		2,255
CLARK FORK RIVER at St. Regis	4,840	121	3,133	4,001	4,310	121	2,787	3,557	3,620	122	2,344	2,971
NORTH FORK FLATHEAD RIVER near Columbia Falls	1,880	104		1,809	1,690	104		1,622	1,400	105		1,338
MIDDLE FORK FLATHEAD RIVER near West Glacier	1,995	114	1,288	1,756	1,820	114	1,169	1,595	1,510	115	918	1,315
SOUTH FORK FLATHEAD RIVER near Columbia Falls (10)	2,330	112	1,514	2,076	2,190	113	1,413	1,934	1,880	113	1,174	1,659
FLATHEAD RIVER at Columbia Falls (10)	6,350	110	4,310	5,773	5,840	111	3,914	5,270	4,890	111	3,109	4,405
SWAN RIVER near Big Fork	670	113		595	579	114		510				
FLATHEAD RIVER near Polson (11)	7,550	113	5,183	6,692	6,900	113	4,708	6,105	5,800	114	3,686	5,079
CLARK FORK RIVER near Plains (11)	13,100	118	8,700	10,570	11,800	119	7,819	9,953	9,800	119	6,198	8,238
THOMPSON RIVER near Thompson Falls	235	107		219	206	108		191				
PROSPECT CREEK at Thompson Falls	127	109		116	117	110		106				
CLARK FORK RIVER at Whitehorse Rapids (12)	14,700	120		12,207	13,200	121		10,945	11,000	121		9,059

(1) Adjusted for storage in Lake Koocanusa
(2) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake.
(3) Adjusted for storage in Georgetown Lake, diversions from and pumping to Silver Lake.
(4) Sum Flint Creek at Maxville and Boulder Creek at Maxville.
(5) Sum of North Fork Lower Willow Creek near Hall and South Fork Lower Willow Creek near Hall.
(6) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner
(7) Adjusted for storage in Painted Rocks Reservoir
(8) Adjusted for diversion into Sunset Highline Canal.
(9) Difference in observed flow Clark Fork above and below Missoula.
(10) Adjusted for storage in Hungry Horse Reservoir.
(11) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.
(12) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Noxon Rapids Reservoir.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

COLUMBIA RIVER DRAINAGE
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

PEAK FLOWS (MAXIMUM MEAN DAILY flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET) Forecast Range			Average
COLUMBIA RIVER DRAINAGE				
Blackfoot River near Bonner	10,050	-	13,000	9,902
Clark Fork River above Missoula	19,000	-	23,000	16,531
Bitterroot River near Darby	8,500	-	11,000	6,650
Clark Fork River below Missoula	35,000	-	45,000	32,373
Clark Fork River at St. Regis	48,000	-	58,000	41,080
N. Fk. Flathead near Columbia Falls	21,000	-	24,000	23,167
M. Fk. Flathead near West Glacier	24,000	-	29,000	25,020

WATER SUPPLY OUTLOOK (Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply)

STREAM or AREA	Flow Period: Spring Season	Late Season
Tobacco	Avg	Avg
Little Bitterroot	Exc	Avg
Mission Valley	Avg	Avg
Flint Creek	Exc	Exc
Upper Clark Fork	Exc	Exc
Nevada Creek	Exc	Avg
Blackfoot	Exc	Exc
West-side Bitterroot	Exc	Exc
East-side Bitterroot	Exc	Exc
Bitterroot River	Exc	Exc
Lower Clark Fork	Exc	Exc

Above average runoff forecast

Runoff during April was a little above average in the Bitterroot and Lower Clark Fork drainages, near to a little below average in the Upper Clark Fork drainage and well below average in the Flathead River basin. Cool temperatures have retarded melt at the lower elevations.

Runoff during the next few months is forecast above to well above average for most watersheds.

The North Fork Flathead and smaller streams in the Lower Clark Fork and lower Kootenai drainages are expected to produce near to a little above average streamflows.

The heavier than normal low elevation snowpack does present a potential for high flows early in the runoff season. As temperatures warm, low elevation melt will fill most stream channels until the snowline retreats to a more normal level. Any extended period of above normal temperatures or heavy rainfall will cause streams to leave their channels.

Those having equipment or livestock in areas subject to high water should be prepared.

Water supplies for irrigation will be more than adequate early in the season and streams should hold up well into the irrigation season.

SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF: Last Year	Average
East Kootenay/BC.	24	139	11
Kootenai/Montana	27	203	127
Kootenai above Bonners Ferry	51	174	123
Little Bitterroot	5	678	133
N. Fk. Flathead	9	144	108
M. Fk. Flathead	9	186	118
S. Fk. Flathead	12	147	114
Swan	5	131	109
Flathead	44	152	117
Stillwater & Whitefish	5	2[illegible]	12[illegible]
Clark Fork above Blackfoot	34	238	126
Blackfoot	20	249	124
Upper Clark Fork above Missoula	54	236	125
Bitterroot	17	280	130
Lower Clark Fork below Missoula	16	231	118
Clark Fork (Total w/o Flathead)	87	244	134
Pend O'Reille (Clark Fork & Flathead)	131	195	119
Columbia (Pend O'Reille & Kootenai)	182	190	121

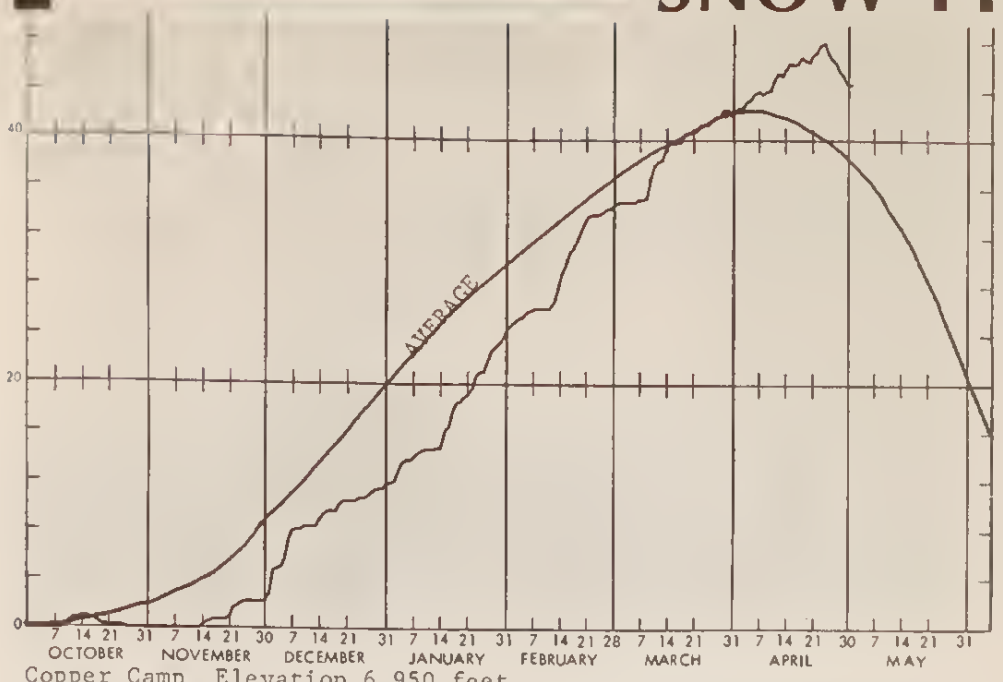
Columbia snowpack above average

Snowpack throughout the headwaters is average to well above average. The water content of the low elevation snow is well above average in [illegible] areas as a result of cool temperatures and additional snowfall in early April.

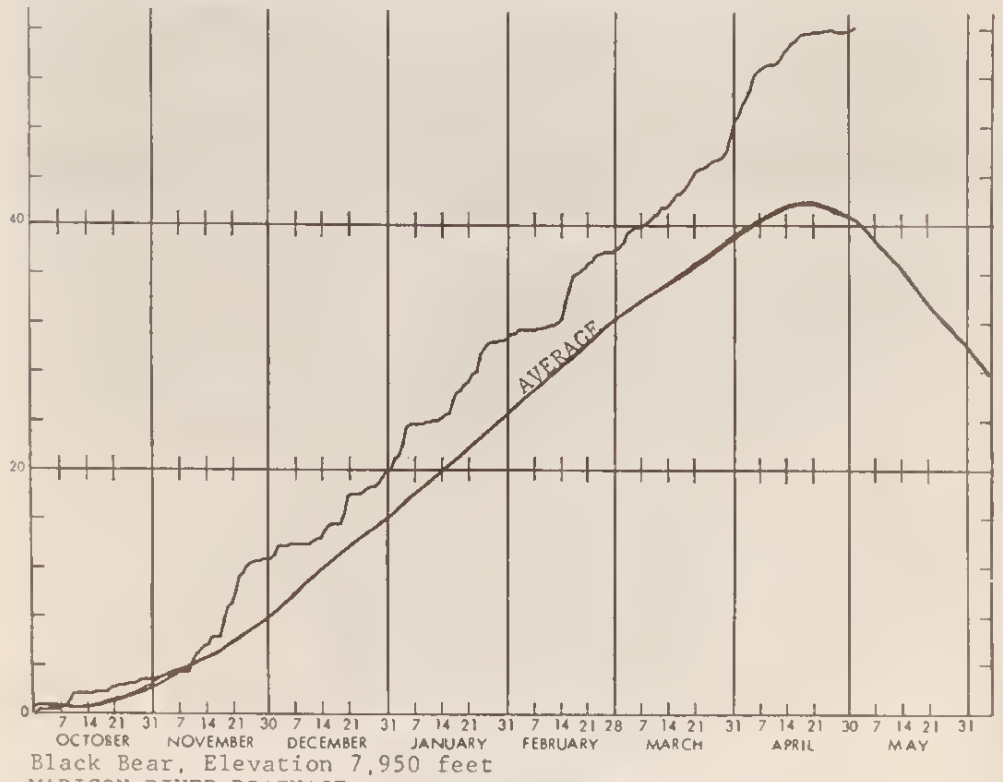
The Continental Divide in the Butte-Helena area, most of the Bitterroot River drainage, and the lower Kootenai River watershed, all have well above average snow storage. All other areas report above average snow for this time of year.

Snow started melting in the lower areas as temperatures warmed in late April and early May.

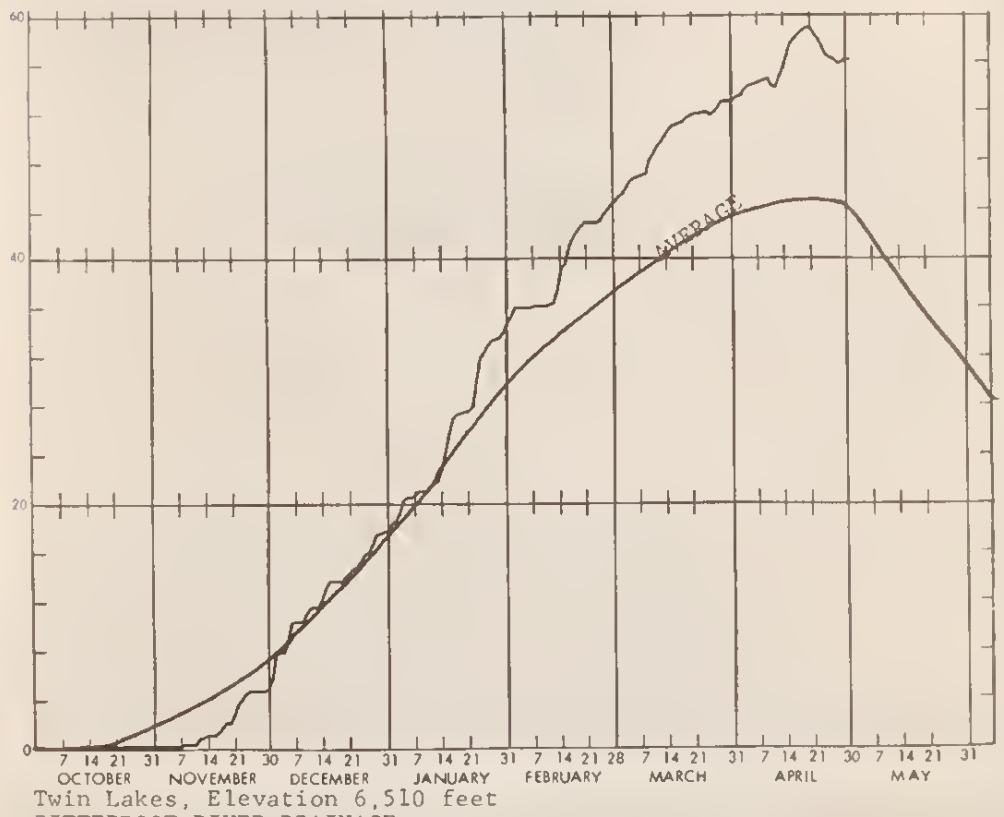
SNOW PILLOW DATA



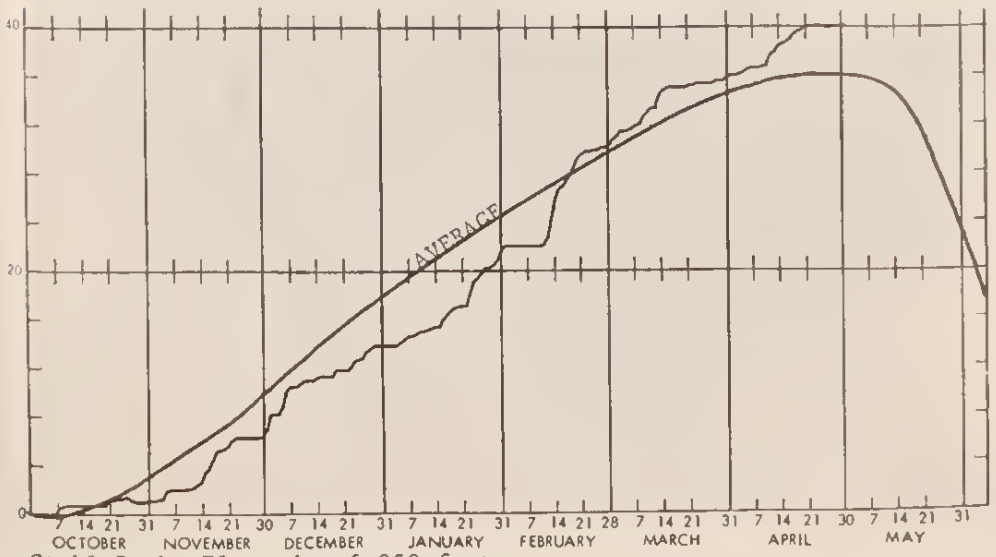
Copper Camp, Elevation 6,950 feet
BLACKFOOT RIVER DRAINAGE



Black Bear, Elevation 7,950 feet
MADISON RIVER DRAINAGE

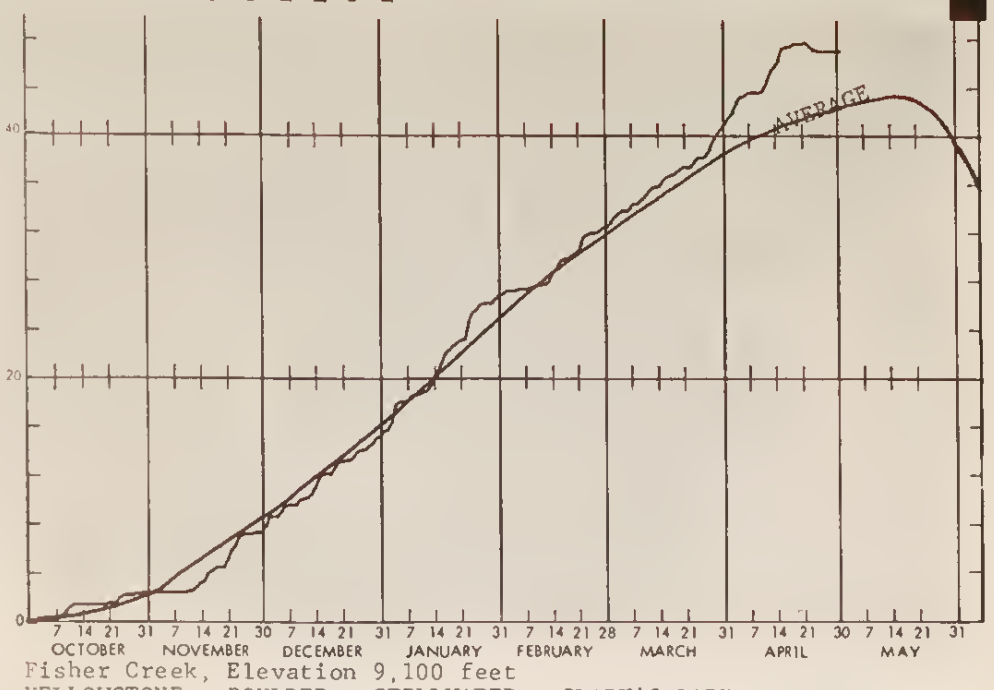


Twin Lakes, Elevation 6,510 feet
BITTERROOT RIVER DRAINAGE

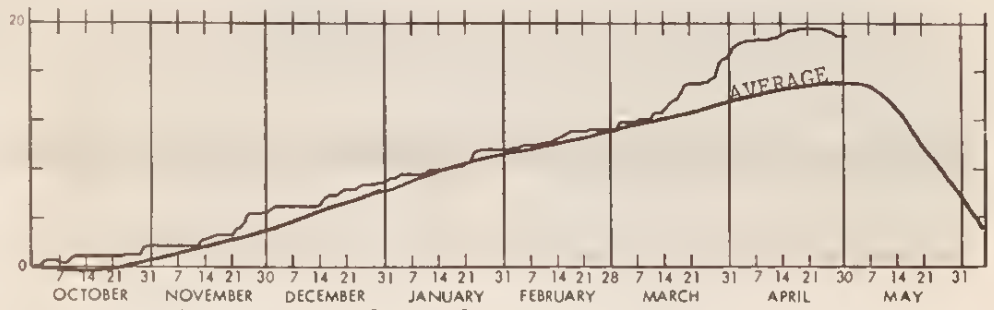


Stahl Peak, Elevation 6,050 feet
KOOTENAI - FLATHEAD RIVER DRAINAGES

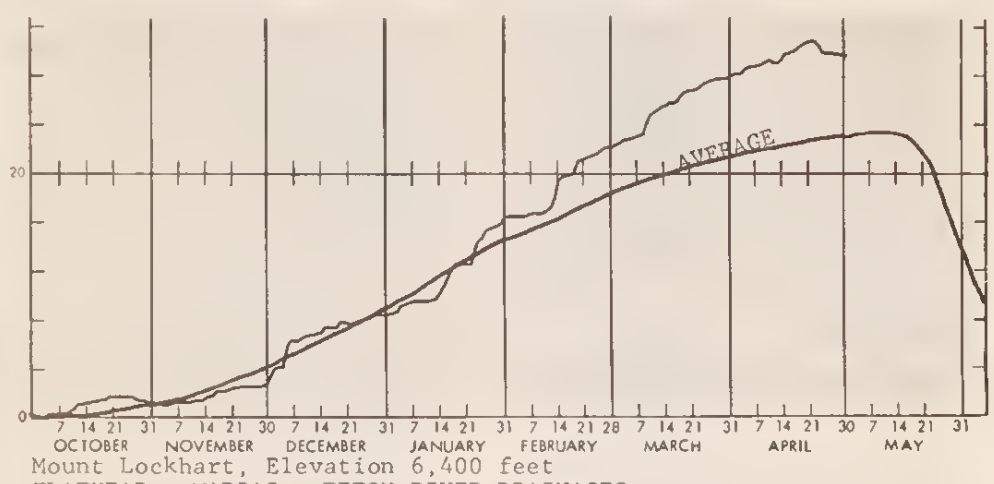
INCHES OF WATER IN SNOWPACK



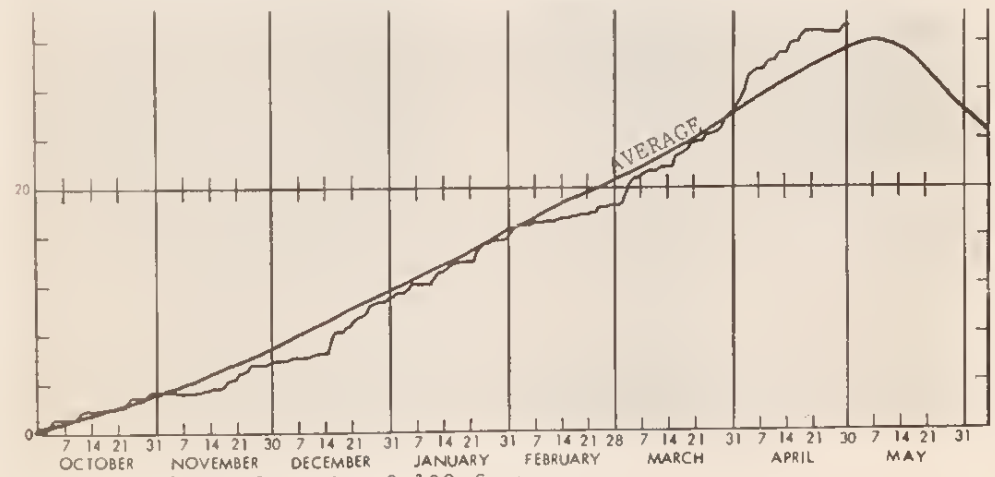
Fisher Creek, Elevation 9,100 feet
YELLOWSTONE - BOULDER - STILLWATER - CLARK'S FORK RIVER DRAINAGES



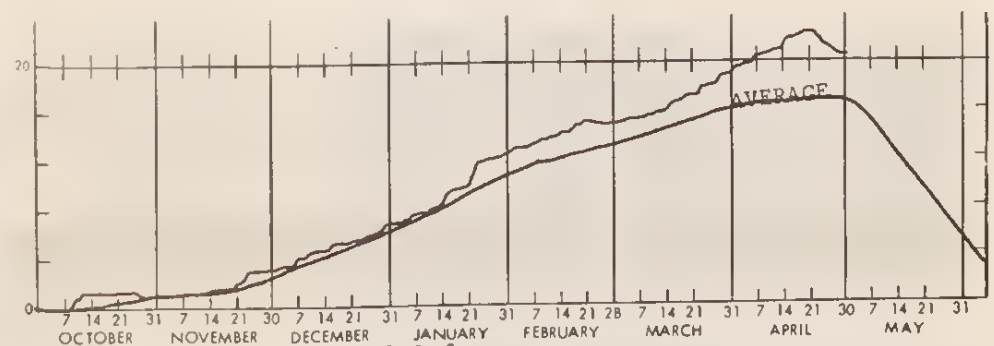
Tepee Creek, Elevation 8,000 feet
MADISON - BEAVERHEAD - RUBY RIVER DRAINAGES



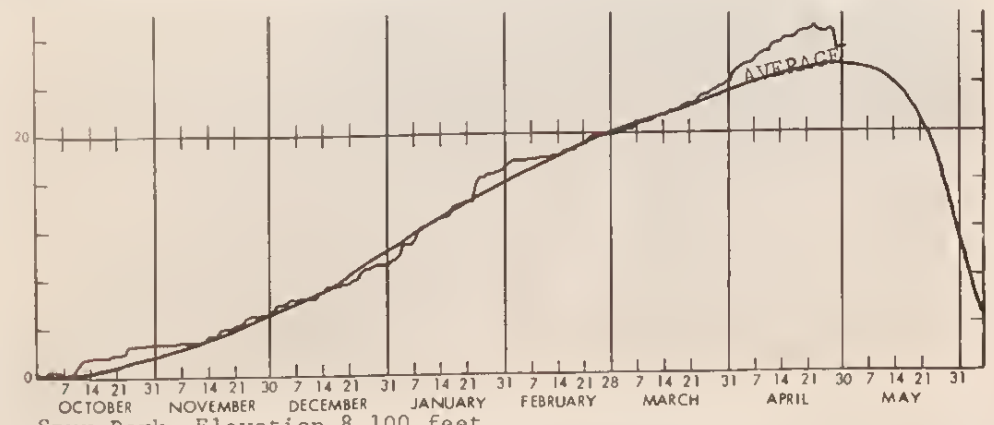
Mount Lockhart, Elevation 6,400 feet
FLATHEAD - MARIAS - TETON RIVER DRAINAGES



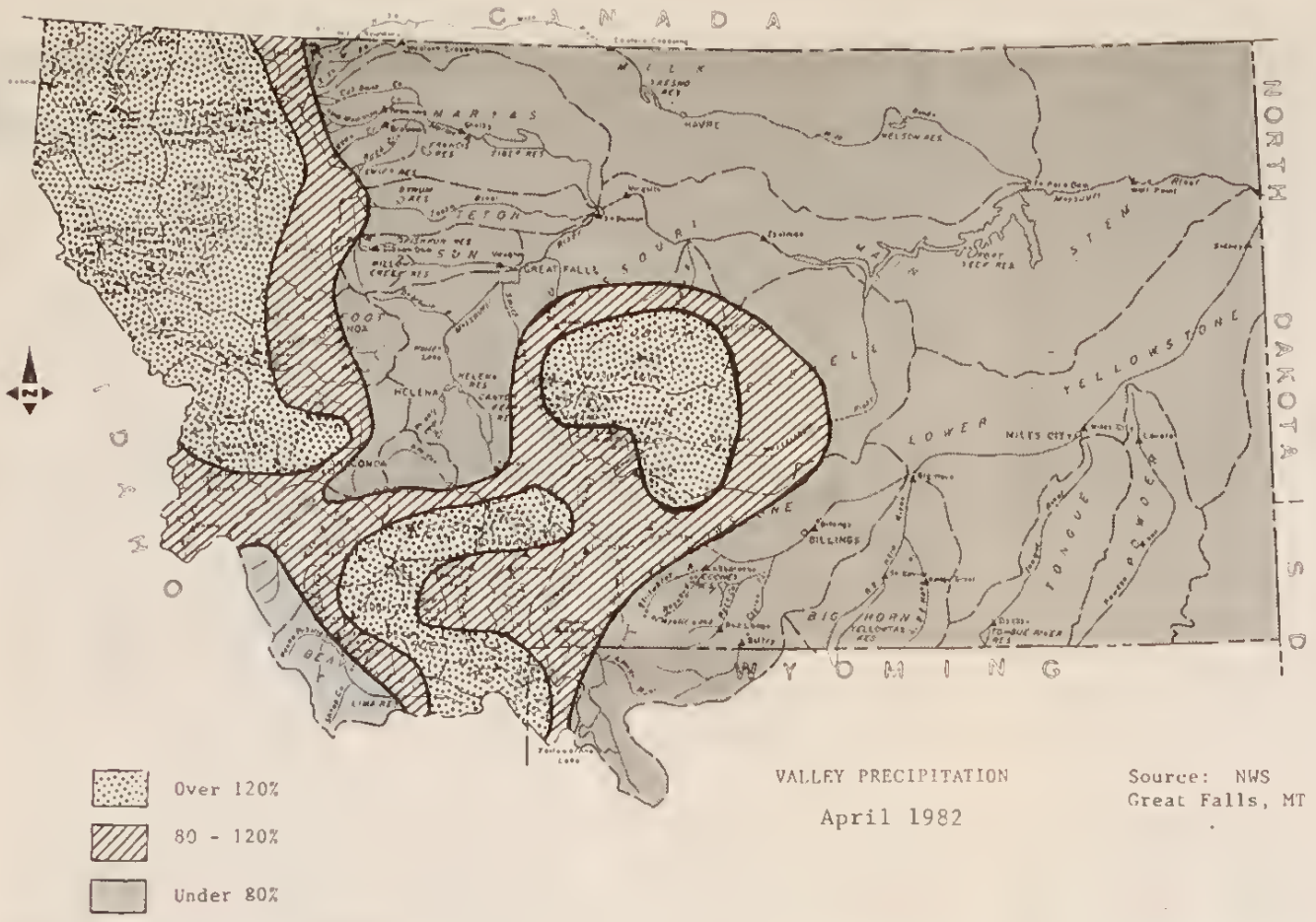
Shower Falls, Elevation 8,100 feet
GALLATIN - YELLOWSTONE RIVER DRAINAGE



Black Pine, Elevation 7,100 feet
UPPER CLARK FORK RIVER DRAINAGE



Spur Park, Elevation 8,100 feet
JUDITH RIVER DRAINAGE



VALLEY PRECIPITATION

April 1982

Source: NWS
Great Falls, MT

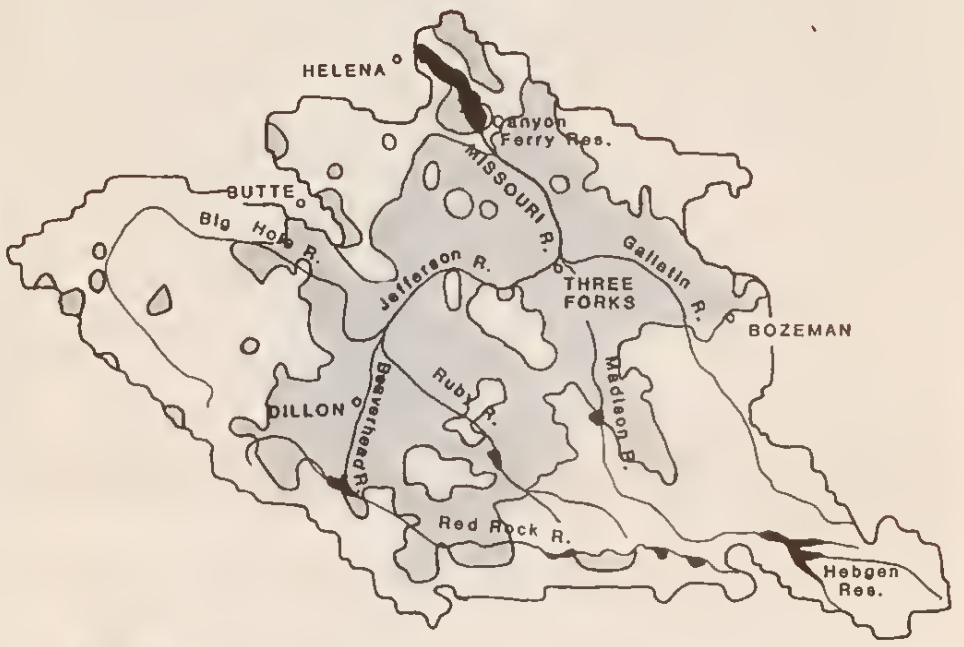
U. S. DEPARTMENT of AGRICULTURE
SOIL CONSERVATION SERVICE
CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH April 30, 1982

Average based on 1963-77 period.

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage This Year	Usable Storage Last Year	Usable Storage Average
	COLUMBIA				
Kootenai	Koocanusa	5,748.2	1,597.0	2,321.0	---
Flathead	Hungry Horse	3,451.0	1,884.0	2,683.0	1,896.0
	Flathead Lake	1,791.0	943.6	1,022.0	915.3
	Camas (4)	45.2	32.0	30.0	28.6
	Mission Valley (8)	100.3	31.9	60.9	47.4
Clark Fork	Georgetown Lake	31.0	26.1	28.1	23.6
	Lower Willow Creek	4.9	5.0	3.9	2.7
	Nevada Creek	12.6	9.9	12.5	10.2
	Noxon Rapids	334.6	321.9	315.1	141.7
Bitterroot	Painted Rocks	31.7	---	---	21.3
	Como	34.9	---	---	17.8
	MISSOURI				
Beaverhead	Lima	84.0	48.9	76.1	57.1
	Clark Canyon	257.2	180.4	182.7	152.7
Ruby	Ruby	38.8	36.4	39.2	35.4
Madison	Hebgen Lake	377.5	236.3	296.9	239.5
	Ennis Lake	41.0	31.3	35.5	35.9
Gallatin	Middle Creek	8.0	4.1	5.2	4.5
Missouri	Canyon Ferry	2,043.0	1,404.0	1,480.0	1,504.0
	Hauser & Helena	61.9	61.3	52.2	61.2
	Lake Helena	10.4	10.2	10.9	10.4
	Holter Lake	81.9	81.0	81.0	72.9
	Fort Peck Lake	18,910.0	14,250.0	14,850.0	15,700.0
Smith	Smith River	10.6	10.8	7.6	9.3
	Newlan Creek	12.4	10.9	10.4	---
Musselshell	Bair	7.0	6.7	5.5	6.4
	Martinsdale	23.1	12.8	12.7	12.3
	Deadman's Basin	72.2	---	58.7	56.8
Sun	Gibson	99.1	58.6	76.1	48.6
	Willow Creek	32.2	25.9	26.2	24.1
	Pishkun	32.0	25.7	30.3	24.7
Marias	Lower Two Medicine	11.9	11.7	---	9.2
	Four Horns	19.2	14.9	---	12.6
	Swift	30.0	13.6	25.9	17.6
	Lake Frances	111.9	83.0	83.5	77.5
Milk	Elwell (Tiber)	1,347.0	594.8	511.5	563.1
	Beaver Creek	3.5	3.2	1.7	2.6
	Fresno	127.2	116.3	78.8	104.8
	Nelson	66.8	47.5	34.2	46.9
	HUDSON BAY				
St. Mary's	Lake Sherburne	64.3	22.7	7.3	22.7
	YELLOWSTONE				
Stillwater	Mystic Lake	21.0	0.0	0.0	2.6
Clark's Fork	Cooney	27.4	12.5	17.8	19.1
Tongue	Tongue River	68.0	---	24.1	42.3
Bighorn	Bighorn Lake	1,356.0	757.0	843.1	585.8

SATELLITE SNOW COVER



Snow Covered Area

Scale 1:2,500,000

MISSOURI RIVER BASIN
Above Canyon Ferry Dam

DATE	PERCENT SNOW COVER	AVERAGE SNOWLINE ELEVATION IN FEET
April 8, 1982	95	4380
April 10, 1982	85	5070
April 16, 1982	75	5590
April 20, 1982	68	5900
April 21, 1982	63	6160
April 22, 1982	61	6200
April 23, 1982	61	6200
April 29, 1982	65	6040

AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

GOVERNMENT AGENCIES
- Canada
  - Department of the Environment
    - Atmospheric Environment Service
    - Water Management Service
  - British Columbia Ministry of Environment
    - Inventory and Engineering Branch, Hydrology Section
  - Alberta Environment
    - Technical Services Division
- Federal
  - Department of the Army - Corps of Engineers
  - Department of Agriculture - Forest Service
  - Soil Conservation Service
  - Department of Commerce - National Environmental Satellite Service
  - National Weather Service
  - Department of Interior - Bureau of Indian Affairs
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
  - Bureau of Reclamation
  - Department of Energy - Bonneville Power Administration

STATE AGENCIES
- Montana Conservation Districts
- Montana Department of Fish, Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana State University - Agricultural Experiment Station
- University of Montana - School of Forestry

PRIVATE ORGANIZATIONS
- The Anaconda Company
- Big Sky of Montana
- Butte Water Company
- Flathead Valley Community College
- Montana Power Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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